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SYSTEMS AND PROCEDURES QUARTERLY

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AN "OLD SHOE" CONCEPT OF SYSTEMS

A Lay Presentation of Systems Work To a Plant Management Conference

By A. L. METTLER

PREFACE

Every systems manager must constantly be on the lookout for opportunities to sell his activity to people who use the results of his systems work. This can be done in a variety of ways. One method of selling one's activity is to recognize the informal organization and adopt the extrovert's attitude toward individuals and groups whenever these people can be made to pause and listen.

Perhaps the best method, but one which is only infrequently available, is the formal presentation of the subject before a group of management personnel. This approach is illustrated in this paper, which largely consists of reproduction of a talk given before a conference of plant management personnel of The Electric Storage Battery Company and Subsidiaries. This conference is an annual affair participated in by key manufacturing personnel from the companies which normally function independently of one another. The conference is held in a hotel where for a week the conferees treat with mutual problems and are exposed to developments in the companies that have a bearing on their activities. Being separated from their normal routines, the conferees are able to concentrate on the broader concepts of their jobs as well as on particularly troublesome situations which are common to many of them.

A case study such as this one points up a treatment of a professional subject for the purpose of bringing the subject down to earth to a group of individuals not professionally trained with reference to the systems and procedures function. It is meant to promote freely the use of the systems and procedures activity on the premise that people work together better when they know each other better—the "old shoe" concept.

* * * * * *

THE PRESENTATION
INTRODUCTION

It isn't often that one has an opportunity to address a group such as this about his own job and, in effect, present his wares to a substantial portion of his market. For this opportunity, I am delighted and duly humble. I am humble for two reasons. On the few previous occasions when I delivered professional presentations, the audience knew only a little about the subject matter or my business affiliation. That condition obviously does not exist today. In fact, many of you know more than I do about both phases of that situation. Usually, the audience did not know me and I could hit and run. Obviously, that is impossible today.

Accordingly, this mission has a single objective; it is to dispel any mystery about our systems and procedures activity. We will treat with why we have this division, what we do, something about how we do it, and something about the importance of the work to plant management. We will show you a film of a system that is about ready for installation, and put ourselves in a position to answer any questions which you may wish to raise.

The term "systems" can probably stand some interpretation. A "system" is merely the method or way in which we accomplish clerical work. We all have systems for most everything we do, some good, and some poor. "Procedure" is the recording of the system so that it is understood by all and can be used for passing on the "know-how" which is necessary to coordinate the effort of the various organizational units and personnel involved. The combination of systems and procedures has the objective of implementing the policy of management. Obviously it seeks to do so with a minimum of clerical expense.

Mr. METTLER, of the Philadelphia chapter and National Treasurer of SPAA, is Staff Assistant to the Vice President in charge of Manufacturing, Electric Storage Battery Company. He was previously Plant Accountant and Office Manager at the Columbia Malleable Castings Division of the Grinnell Company, Providence, R. I. He organized a Systems and Procedures Division for his company to accomplish a centralized staff activity to function throughout all departments. He is a director of the Philadelphia Chapter of SAM and maintains membership in NOMA and NACA.

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A staff activity is a planning function without authority to carry out or activate the plans, but rendering assistance to those who are the doers, usually known as line organization. Any staff activity is brought into being to render assistance to management, usually assistance of a specialized nature, and usually centralizing a function in order to relieve line organization management of one of its many pressing functions for which it probably is not well equipped to handle along with the direction of a working force.

We can see, then, that a properly operated systems and procedures unit should serve as an integrating link between the policy makers and those who carry out the policy.

Staff Activity Concept New In Systems and Procedures

There is nothing new about systems and procedures; the only new thing is the staff activity concept. For years, in fact ever since the work of Frederick Taylor, we have had in industry substantial work in the nature of standards of one kind or another. In The Electric Storage Battery Company, we have, for years employed industrial engineering techniques to set standards for shop practice. We have engineering standards for processing, we have job evaluation, assembly specifications, laboratory test procedures, and similar results of engineering studies.

For years, we have had written instructions and, therefore, procedures are not new. We like to think, however, that there have been developments in procedure writing which make them better than the way we wrote them many years ago. Staff activities are likewise not new as a method of setting up an organization. Our time study and methods work have been handled for years on a staff basis, and many of our line executives have staff assistants.

Although systems work has been done by line organization ever since the company was founded, in recent years the problems of the line supervisor have become so numerous that insufficient time could be devoted by such supervisors to the development of improved systems and the writing of procedures. The Electric Storage Battery Company has 1179 clerical employees, of whom 752 are located in Philadelphia, and 427 are scattered across the country. The work of these people needs to be coordinated so that objectives can be accomplished in the easiest manner. Furthermore, in the last several years, the nature of clerical work has become increasingly complex, as you know. All of you can remember when we made no deductions from an employee's gross pay.

Although there are plenty of companies doing excellent jobs of systems work without a staff activity for this purpose, I like to think that the ESB management exercised modern foresight when it joined the ranks of the many large companies which have organized systems and procedures units since the war. It is an attempt to make easier the job of running a complex business and to reduce the clerical cost of administration, and guard against the rendering of major decisions based on improper or soft information resulting from poor systems.

ORGANIZATION CHARTER

The charter written to put this staff activity into business reads as follows:

> The Comptroller has been charged with the responsibility for overall company systems and procedures.
>
> To discharge this responsibility, there has been organized a staff division, reporting to the Comptroller, known as the Systems and Procedures Division.
>
> This Division will have the following duties:
>
> a. Prepare and issue Standard Practice Instructions covering interdepartmental procedures.
> b. Coordinate department procedures to prevent conflicting objectives and duplication of efforts.
> c. Prepare department procedures for those departments not equipped to develop and issue their own procedures.
> d. By cooperation with designated personnel at direct subsidiary companies and at branch plants of ESB companies, prepare and issue procedures involving office and clerical requirements under contracts with ESB Company customers.
> e. Serve as a source of information on standard practices.
> f. Develop simplification of clerical work wherever it is needed.
> g. Control all ESB forms and office supplies

The systems and procedures division at Exide is a compact group, consisting of only four people who function in an overall manner in accordance with the charter described above. We deal directly only with systems problems that involve more than one major department of the company. We expect the departments to cooperate with our programs and, at the same time, carry out the programs within their departments and develop systems that are intradepartmental. In order to coordinate this systems and procedures work throughout the company, we have a review committee made up of representatives of each of the major departments. This committee is termed the office committee and is chairmanned by the manager of the systems and procedures division.

Standard Practice Instructions Not For Associated Companies

Our jurisdiction does not extend beyond the confines of The Electric Storage Battery Company proper and depends upon the cooperation of the Wil-

lard Storage Battery Co., Exide Batteries of Canada, Limited, and Stokes Molded Products, Inc., for follow-through with any institutional program that we may sponsor. Standard practice instructions, written by us, are not intended to be handed to supervisory personnel in our associated companies. In fact, we feel that the associated companies should write their own procedures, furnish their own forms and do what it takes to cooperate with the procedural program in a manner best suited to their local situations. In fact, even with procedures internal to The Electric Storage Battery Company proper, we recommend that our operating departments write their own departmental procedures rather than pass on copies of SPIs which may not be explicit in terms best understood by their own people and which may not include all the minute details needed in various operating locations.

I think our combination of central and decentralized organization for systems work is just a little peculiar and, in your relations with other companies, you may find a more centralized approach to systems work. You will find it done under different organizational titles. The term "Organization and Methods Department" is quite widely used because of the similar character and overlapping relations of work involved in making a systems analysis or in making an organization study resulting in charts and organization manuals.

Some Functions Are Yet to Be Added to Program

In discussing what we do, I should hasten to say that we do not, as yet, perform all the functions that we expect to accomplish after we finish some of the major jobs and get better equipped to carry out our duties. We are presently doing very little in the way of design and control of office forms and the standardization of office supplies. Our program includes three major projects now in the mill.

First, we have been working intensively on a uniform order invoice system which has been decreed as the most needed clerical tool in the company. You will understand this when you have seen the film to be shown today.

We have done preliminary work and propose to proceed more extensively soon on the consolidation of industrial battery specifications and production orders.

We have spent a good deal of time in preparing a procedure manual for interdepartmental procedures, known as "Standard Practice Instructions," and have aided operating departments to develop departmental procedure manuals.

A sampling of the short term projects which require considerable time for a relatively small staff includes: organization charting, the establishing of certain office standards, assisting in the planning of our contemplated new office building, participating in various and sundry office service activities and, largely, miscellaneous procedures required to activate changes in operations such as the introduction of Willard battery manufacture and shipment at our Chicago Plant, the adoption of direct shipment to dealers for Ford Brand batteries and similar situations that arise without any programming.

In discussing how we perform our function, we will presume a set of circumstances requiring analysis of a department, plant office, or similar unit, to determine what can be done to improve its operations.

This calls for a preliminary survey to:

1. Get acquainted with the organization.
2. Identify problems needing attention.
3. Develop and recommend projects.
4. Establish priority for such projects.

It is not often that we require a preliminary survey because, in the manner in which we usually operate, the projects do not require determination. They usually stand out pretty strongly, such as in the case of the need for the uniform order invoice system. But if we were asked to do something of an unknown nature to improve the functioning of a certain office, we would make a preliminary survey. In doing so, we would examine the organization for the seven major elements of good management.

These are considered to be:

1. Objectives of the organization are well planned.
2. There is a well balanced organization.
3. Sound procedures are in evidence.
4. There is effective utilization of personnel.
5. Facilities are adequate.
6. Comprehensive performance standards are in evidence.
7. There is a system of effective appraisal of results.

When the area of the problem has been defined either by a preliminary survey or by specific direction, a system survey is applied to that problem. This survey determines by interview, work examinations, volume analysis, etc., the answers to six strategic questions. These are: Who, What, Why, How, Where, and When.

You people do not need an elaboration on these six questions. You probably can recite them from your own experience. I might emphasize, however, that the question "Why" is one which we keep in the front of our minds because so many times the answer to that question discloses that there is no good reason for doing the particular detail that is involved. It is a question which we highly recommend and one which, perhaps, should be carried in large letters on every office wall.

Relevant Facts Require Preparation for Analysis

When the facts have been gathered and these are determined to be all the relevant facts, they must be

prepared for analysis. In any complex situation, this usually requires charting, preferably procedure charting or flow process charting.

In developing the new system, the analyst searches for the shortest line between two points. He looks for the method that would require the least effort, the simplest training and the quickest process. He attempts to keep to a minimum the number or organizational units involved in the system so as to reduce the layers of paper work. Every time a separate office or even a small organization unit is involved in a system, the paper work flow is increased and additional copies of forms and reports probably are required. He invariably looks for over-emphasized controls which have arisen, because sometime in the dim past a clerk or supervisor was asked for a figure which he had difficulty in producing, and, therefore, has kept auxiliary records from that time on.

Adaptability of Equipment Weighed with Work Flow

Obviously, in developing the new system, the analyst calls upon his knowledge of equipment techniques which may be peculiarly adapted to the process involved. More often than not, however, mechanization is not the answer. Many times a simple rearrangement of work flow, with perhaps the introduction of more adaptable forms, accomplishes all that is desired. Incidentally, there has been published, recently, some excellent material on "Production Planning and Control in Office Operations." It is available from the Superintendent of Documents, U. S. Government Printing Office. It explains the importance of considering three ways of dividing clerical work:

1. The serial or assembly line plan.
2. The parallel plan whereby two or more smaller assembly lines process the information.
3. The unit plan whereby an individual or a small unit does the complete processing.

The next step is to procedurize the new system, meaning the preparation of standard practice instructions, the selling of the proposed system, and the installation of the new system. In considering this aspect of systems work, I would like to point out the importance which we attach to clearance of procedures.

All of our standard practice instructions are first written in draft form. They are then submitted to the systems representatives or office committee members from the departments that are affected by the new procedure. This may include the designated individual at one of the subsidiary companies. In following this practice, we consider Chicago Plant as a separate department because of the integrated nature of its operations and supervision. We request the representatives to return the draft to us with comments which, oftentimes, require additional consultations with other affected personnel. When all details have been straightened out, and not until then, we submit a final draft to the responsible official, usually our vice president and comptroller, for authorization and release.

Departmental Procedures Used to Activate SPI

The authorized SPI is then issued to all departments and companies in the organization. It is then the job of the systems representative from these departments or companies to issue departmental procedures to activate the SPI.

Just a word should be said about the public relations requirement of our jobs. We feel that it is essential that we maintain outside contacts as an important phase of our activity. Consequently, we maintain memberships in several professional associations that permit us to rub elbows with people interested in our types of problems and who have "know-how" that they are willing to exchange with us. We attempt to cultivate friendly relations with equipment and material suppliers so that we are given beneficial and special treatment that adds to our knowledge of systems techniques.

Since a successful systems and procedures program has the objective of making everyone's job easier and more effective with better accomplishment of management objectives, an understanding of this function just naturally aids cooperation with systems projects. Complete familiarity with the approach and techniques of systems analysts equips the manager to condition his personnel for the survey work that is required. The elimination of fear on the part of employees is a major consideration. This must be accomplished to permit successful survey work. Fear is primarily a result of contact with the unknown. We are, therefore, primarily interested in dispelling any mystery about systems and procedures work.

In addition to these reasons, an understanding of systems and procedures functions will enable managers and supervisors to adopt readily many techniques that are considered special to systems and procedures units. We have not discussed the phase of systems work commonly referred to as work simplification. This is a simple application to clerical work of industrial engineering techniques which are familiar to all of you who have supervised manufacturing operations. You are all familiar with the requirements of an efficient workplace. You understand the advisability of short line transport. You can readily understand the advantage of using initially prepared records to save transcriptions. Many of you and many of your people are adept at developing gadgets; you are familiar with the principles of layout and these can be applied to clerical setups as well as manufacturing setups. There is, therefore, no reason why a plant manager cannot indoctrinate his personnel into the systems philosophy whether it applies to clerical work or to manufacturing operations.

PROFILE CHART FOR PROCEDURES

A Graphic Aid to the Analyst in Planning a Procedure Writing Program

By ROBERT H. TAUNT

To define the difference between a system and a procedure it has been aptly said, "When you give your wife half of your money and you keep the other half, that's a system. When you write down the explanation of what you did with your half, that's a procedure." Let us then accept this definition for the purposes of this discussion: a periodically recurring function or task which is carried out in a generally uniform manner is the method, practice or *system;* a written statement embodying policy or sequence of operations is the instruction, regulation, or *procedure.*

Reducing a carefully developed system to writing has resulted in many types of procedures, as shown by the many different terms in use: standard practice instruction, methods manual, general procedure, regulations, supervisor's handbook and standard operating procedure. However, though these procedures may be different in form, they collectively have two major objectives. First, all are directed toward formally establishing policies, responsibilities or functions. Second, all are intended to inform, guide, instruct, or direct individuals or groups in the performance of their interrelated jobs. Although the writing of procedures may take many different forms, the development of any procedure should be toward producing an instrument which is both useful as a guide and practical as a reference.

Rather infrequently is a procedure writer required to draw up a complete set of procedures for an entirely new organization. Much more frequently he finds himself established in a going concern, and very often his investigations reveal that, on the whole, it is a fairly effectively operating organization. Although the procedure writing problems of the new organization are widely divergent from those of the more mature concern, the project of developing or improving procedures can be based on at least one common starting point and that is the examination and analysis of the organizational structure.

In the new organization, the fundamentals of good procedure writing apply. However, this does not imply that the new systems to be established require procedures in minute detail. It is certainly not likely that a completely uninformed management, a wholly inexperienced supervisory group, and an entirely unskilled complement of employees should be expected to operate solely by reference to a procedures manual. Even the most casual employment standards would presuppose that a resident manager possessed certain basic abilities and experience, that a supervisor had certain technical skills and leadership qualities, that the ordinary typist knew how to type. The basic capabilities of the incumbents, the "know-how" which they possess, is the guide which limits the maximum of detail to be included in a procedure. The present-day development of procedures toward brevity is the reflection of this fact.

In the older organization, where written procedures may even be looked upon by some as unnecessary, the more advanced techniques of procedural improvement are called for. However effective the present operations are, if they have "just growed", many areas of improvement will be apparent in making only a preliminary survey.

Although operations may have been carried on over a period of years, the introduction of written procedures will easily pay their way if they are only developed toward integrating the work of individually operating units. Conversely, the results of a

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planned audit of existing procedures should be obvious. The apparent broad, practical "know-how" of the people in the organization will serve as a guide to the minimum of detail to be included in a procedure. Here, again, the call for brevity is emphasized.

These two extremes have been delineated for a single purpose. By spanning the maxima and minima of detail to be included in a procedure, we sense the size of the area in between. It is in this area that a procedure writer requires lines of guidance to direct his writing toward a useful, practical end. (It is assumed that he has all the necessary information regarding the system. The immediate question is not *what* to write, but *how* to write the procedure) Thus, procedure development should begin with the need for information.

practical simplicity. To attain such a reputation, the procedure must be stripped of all superfluous detail. But to do so without damage to the procedure is difficult unless one question is first considered: to whom is the procedure directed?

In developing an answer to this question, a procedure "profile chart" will graphically describe an organization composed of four major segments or levels. At the top is the group of individuals comprising the management. These are men primarily concerned with the seven elements of executive interest: (1) formation and interpretation of policy; (2) development of an integrated organization; (3) maintenance of satisfactory labor relations; (4) establishment of standards of productivity; (5) institution of controls; (6) planning of methods improvement; (7)

A PROCEDURE PROFILE CHART

LEVEL (Who wants this procedure?)	INFORMATION (What does he want to know?)	DESCRIPTION (How much detail is needed?)	DISTRIBUTION (How many groups are affected?)	PURPOSE (How is the procedure to be used?)
Top Management Executive level.	Policy, Major phases of operations.	General procedure: Subject covered in one to five short paragraphs. "Why, When, What."	All top management, All major division heads.	For: Dissemination of policy, Information, Guidance.
Staff and Major Division Head level.	Major phases of operations, General direction.	Standard practice: Subject covered in ten to twelve short paragraphs. "When, What, Who."	All major division heads, All department heads.	For: Information, Guidance, Inter-relating operations.
Operating Supervision level.	Specific direction, General instruction.	Operating method: Subject covered in one to two pages. "What, Who, How."	All department heads, All supervisors concerned.	For: Guidance, Inter-relating operations, Compliance.
Skilled and semi-skilled operator level.	Specific instruction, Specialized information.	Instruction: Subject covered in one to two pages. "How to do it."	All supervisors concerned, All operating employees concerned.	For: Inter-relating operations, Compliance.

Certainly no one would assume that a written procedure could be so completely detailed as to describe what to do in every case of exception. Nor can a procedure so fully detail the "why" as to take the place of adequate training or competent supervision. The real value of the written procedure lies in the fact that it *supports* verbal directions, *supplements* a training program, and *aids* supervision by eliminating the need for repeated routine instructions. Since it cannot provide all the answers, the procedure must be outlined and developed as a structure on which the user can build. As such, it must be noted for its consideration of future development.

At the second level is the group of individuals who direct a major staff function or who head a large division of operations, comprising several departments or sections which perform interrelated tasks. Though these men may frequently influence the development of policy, they are basically concerned with its execution, since the major scope of their activity is closer to the operating level.

In considering the third and fourth levels of an organization, we leave the higher ranks of general

(Continued on page 15)

METHODS OFFICE: SCOPE, PRESENTATIONS

Definition, Responsibilities

By WILSON K. MINOR

It is essential that the definition and scope of office systems and procedures be broad enough to include all situations. Thus, the following contains material not entirely applicable to every situation, although there will be situations in which all portions can be applied. The present purpose is to write a description which can be useful to all members of the systems and procedures profession. The words systems and procedures mean:

1. The organized arrangement of personnel and equipment for the performance of the office, accounting and clerical functions wherever such functions may be situated.
2. The planning of office operations and facilities, which also includes working conditions, such as space, heat, ventilation and furnishings.
3. The production of all functions related to office, accounting and clerical operations at an economic cost involving manpower, equipment, materials and all cost components related thereto. Simplification, elimination of duplication and the reduction of office routines to essentials.
4. The "on the ground" survey which determines, by detailed analysis, flow charts and other recognized tactics, the efficiency and effectiveness of the office operation, including assignments or changes in personnel; equipment; business machines; stationery forms; all methods; and the necessary degree of internal audit and control. Also, the periodic review to effect minor revisions where necessary.
5. The formulation of performance standards and the issuance and revision of such standards for office and clerical functions.
6. "Selling" of the proposed changes to management through presentation from both a management and operational viewpoint; and installation of the new or revised office, accounting and clerical methods.
7. Recorded instructions for the procedural control of office, accounting and clerical methods.

(Continued on page 15)

Procedures, Presentations

By JAMES M. KENNEDY

Scope of Topic

1. Preparing the procedures.
2. Housing the procedures.
3. Distributing the procedures.

General Principles Involved

1. Make the procedure fit the requirements as no one preparation is suitable for all situations.
2. Keep these objectives in mind.
   Training of new employees
   Training experienced employees in new methods
   Standardization of practice
   Simplification and economy
3. Know who the key readers will be and write according to their tastes.
4. Make the procedures as palatable as possible.
5. Accentuate the positive—omit the negative.
6. Break up procedures into smallest units feasible.

Preparing Written Procedures

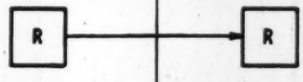
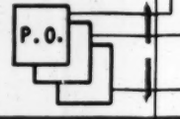
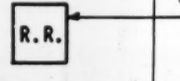
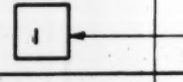
1. Outline contents first—break up into major and minor divisions and paragraphs and organize for clarity and continuity.
2. Use plenty of side captions or paragraph heads—make these say something in a positive manner.
3. Select style most suitable to readers—outline or straight prose.
4. Dictate and edit carefully.

(Continued on page 15)

The two papers comprising "Methods Office: Scope, Presentations" are from a study group program of the San Francisco Chapter of SPA. They are the result of group discussions of the subject matter. The name of the group leader appears as the author in each instance although credit is due the entire membership of the chapter for active participation in the program. Mr. MINOR is Assistant Controller of the Standard Oil Company of California and Mr. KENNEDY is an associate of McKinsey and Company.

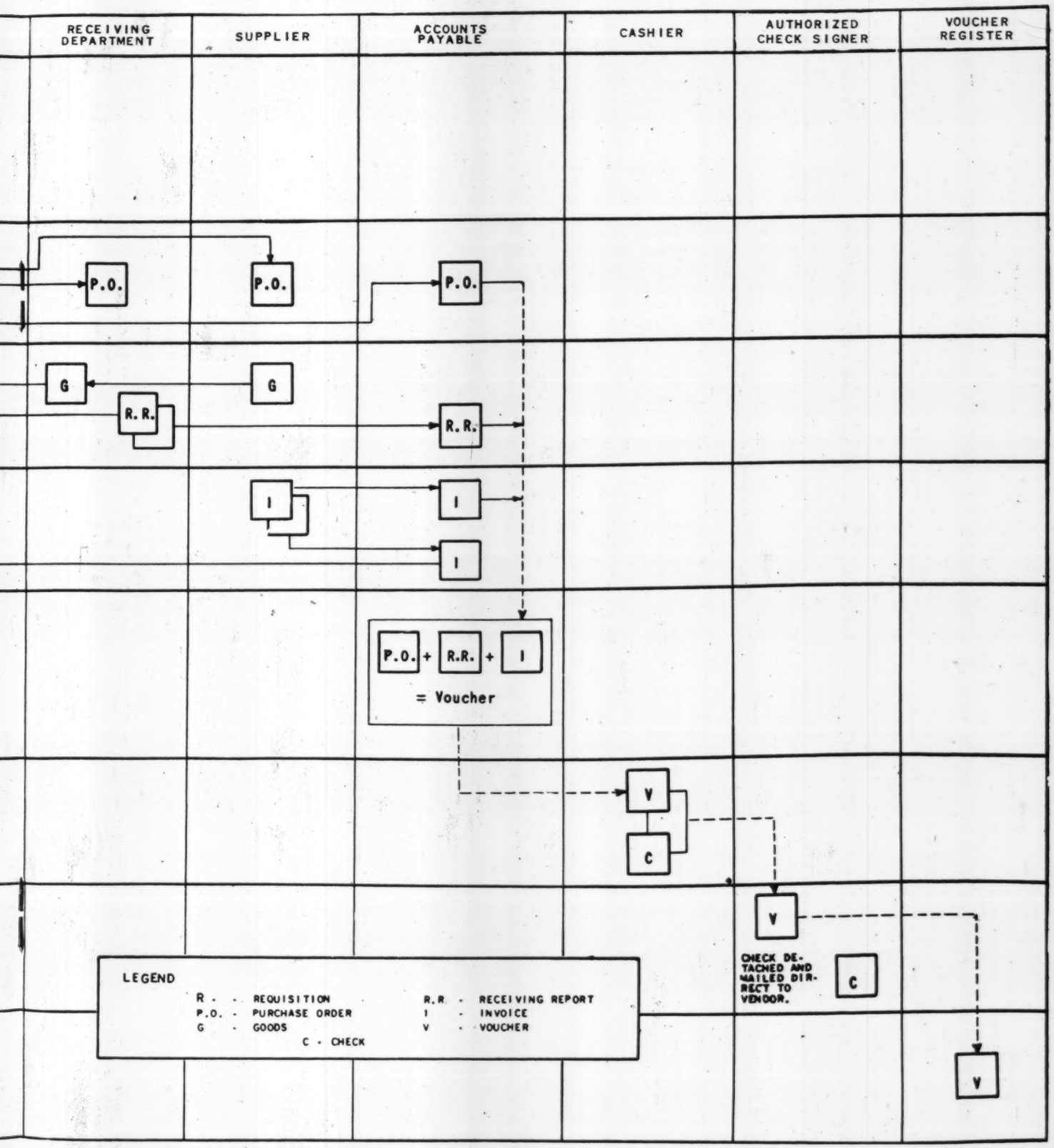
INTERNAL CONTROL THROUGH

By J. G. M
New York City C

STEPS TAKEN	REQUISITION	PURCHASING DEPARTMENT
1. Requisition prepared by person requiring goods. States quantity and description of goods. If control over double issuance of purchase orders is deemed advisable, the accounting department may require a copy of the requisition for comparison with purchase order and inclusion in voucher.		
2. Purchasing agent prepares purchase order for vendor giving best price and terms for goods requisitioned.		
3. Goods delivered by vendor to receiving department which, if goods conform to description on purchase order (a) delivers goods to requisitioner and (b) prepares receiving reports.		
4. Two copies of invoice submitted by vendor direct to accounts payable section. Copy is sent by accounts payable to purchasing agent. Payment is made only on original invoice.		
5. Purchase order, receiving report agreed with invoice for: price, discount, extension, additions, quantity, terms. Voucher prepared to show accounting distribution. Amount for payment approved as having been audited. (In some instances checks are prepared and first signature affixed at this point.)		
6. Audited voucher forwarded to cashier for preparation of check in amount approved for payment. Cashier puts signature on check. Entry made in cash book for cash disbursement.		
7. Voucher and check submitted to official for second signature. Check signed, voucher marked "Paid", check mailed to vendor, and voucher returned for accounting entry.		
8. Entry made in voucher register, in expense ledgers, and in inventory records. Voucher is filed.		

GH RESPONSIBILITY SEGREGATION

. G. NAGRO
City Chapter No. I



PLANNING PROCEDURES FOR PROFIT

A Program for Administrative Cost Reduction Through Improvement in Management —Human Relation Considerations—

By JOHN B. JOYNT

(The Second of Two Articles)

In carrying out a total management program, the primary problems are those of human relations. Frequently the analyst is faced with such attitudes as these:

"We're making plenty of money, so why bother with that stuff?"

"We've tried that before."

"It won't work."

"That may be all right for the rest of the organization, but my job is different."

"We've been doing it this way for many years; we haven't made any mistakes, why change it?"

These are commonplace attitudes and must be dealt with. It is unfortunate that they sometimes prevail at high management levels too. Usually the individual who thinks along these lines is embedded in detail and does not have time to lift his sights to broader horizons. He is literally too busy to be efficient. Because of these attitudes, the human relations aspects of procedures improvement are frequently more difficult to deal with than the technical aspects. Some of the human relations aspects are:

Management must be competent. Before management can improve its relationship with its supervisors and its employees, it must see that its own house is in order. Management must enjoy the confidence and support of its employees and supervisory staff if it is to improve human relationships. In the systems and procedures field, the quality of an analyst's work is a key factor in building sound relationships with his associates and their employees.

Informing Entire Group of Objectives of Program

Management must build teamwork and understanding. The first step in building teamwork is to insure that the entire organization is fully aware of the objectives of the program and that the management service concept is to be followed in accomplishing these objectives. Launching the program with the understanding that each key official has a definite responsibility for making it a success brings the organization closer together for a single purpose. When this approach has been decided upon, it is important that the operating units concerned understand that they have a major responsibility in improving their own systems and procedures, and that the central systems and procedures unit is available on request to give them every possible assistance in developing better methods.

When an individual is given an opportunity to participate in the development of a company procedure, his work becomes a more important project involving several organization units and assumes company-wide significance. Each individual who is participating in the study as a member of a team sees how he fits into the company structure as a whole. His work and his relations with others are thereby broadened. This cooperative approach must be more than a statement of operating principles. The program must actually function on this basis. All projects should be planned and carried out on a joint basis. Both supervisor and workers should be brought into the decision-making aspects of procedures development. After all the facts and flow charts have been developed, a meeting of the individuals concerned should be held to explain why the study was made. All the individuals concerned should thus participate in the decision-making process of procedural improvement.

Management must inform supervisors and the workers of major decisions. A key factor in maintaining the good will of the organization as a whole is to keep it well informed. It is an accepted fact that people are skeptical of things they do not understand. Keeping the organization informed means telling key supervisors and the workers of the significant things affecting their jobs, and letting them hear from top management directly. All concerned should be advised of developments at the same time.

Management should see that key individuals and workers understand the entire job. No intelligent individual can be enthusiastic very long about a job unless he understands and appreciates the relation-

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ship between his responsibilities and those of his associates. That is one reason for an organization manual in the hands of all key employees. That is the reason for policy and procedure manuals which every worker understands.

Management must handle changes with extreme care. One of the most important decisions that any company must consider in carrying out a systems and procedures program is the effect of change on its employees. Even though change is a normal thing in a progressive organization, it is difficult to deal with because it involves the worker. How will it affect him? What will his attitude be? Will it have a bearing on his place in the organization or in the community? The extent to which change is accepted or rejected depends almost entirely on whether the individuals concerned gain or lose. As a result, changes must be made slowly. The people concerned must know the reason that a change is to be made. They are entitled to a complete explanation beforehand. Their help in effecting change should be solicited.

Non-critical Approach Used in Dealing with Employees

Everyone resents criticism. In dealing with change, care must be exercised not to be critical. Criticism of a method invariably is interpreted as being critical of the individual who set it up. For this reason it may be necessary to develop a face-saving approach before the change is recommended. This gives the individual concerned a basis for acceptance which he might otherwise resist.

One of the most important aspects of change is the confidence that the employees have in the company's management. If the company disregards the employee and his welfare, changes will be difficult to make. They will be feared and resisted. But if the organization has been progressive over the years, has made sound technological and administrative improvements and has given consideration to the employees in connection with each change, it will have developed the attitude on the part of employees that change is normal and sound. This is the ideal. In such companies, change will be recognized as a step forward, something to be desired, since the organization and the community in general have benefited directly through change in the past.

The management service concept should be cultivated. Management service should be the operating philosophy of a procedures and systems unit. Its only purpose is to help key officials develop ways and means of doing a better job. The service concept is not only an important factor in establishing a systems and procedures program but it is the only way of maintaining proper relationships with the key officials throughout the organization. The service concept must apply to the office of the chief as well as subordinate units. Carrying out such a program is not without problems, since the most fruitful areas are those in which problems exist. But through the development of sound systems and procedures, the analyst can be of real assistance. In the process of solving problems it is frequently necessary to reconcile conflicting viewpoints within the official family. This must be approached very carefully and on a purely impartial basis. To perform a real management service the analyst must consider the interests of the company as a whole as well as the individual organization units.

Management must continuously train, develop and promote from within. An enlightened management looks ahead. In its advance planning it must continuously be training and developing people at all organization levels, including the top management level. Much of the work carried out in the programs already discussed becomes the doctrine for such training.

Survey Participation Adds Value to Analysts Involved

Under the decentralized approach, the individuals selected in each major organization unit to conduct procedure studies become extremely valuable to management. They not only carry a heavy burden in the improvement of today's operations, but by assuming these responsibilities they become broader in experience and outlook and they become more valuable to the organization in the future. The test of an undertaking is generally measured by results. When a procedures group develops, as a team, a proposed change in organization or procedure, and it is the unanimous opinion of the group that the proposal should be adopted, the recommendation is almost universally accepted by management and successfully and enthusiastically carried out by the operating units concerned. A prime factor in building up this group within the organization is to assist them in doing the work. They should be encouraged and helped in every way possible. Full credit for the success of the program should be ascribed to them, for they are the backbone of any systems and procedures program.

The approaches to the improvement of management and to cost reduction are essentially the same. The specific approach which has been described blends all the techniques of the systems and procedures analyst into a simple comprehensive company-wide program. A successful program of this caliber must be well planned and administered and well synchronized with the major operations of the company as a whole. To members of the systems profession such an undertaking may not only present a real challenge but also a real opportunity.

TWO TABULATING CASE STUDIES

Salary Payrolls

By C. G. BISHOP

From the standpoint of cost and efficiency, the tabulating plan for processing salary payroll checks, registers and related payroll reports and statistics at central accounting offices had most to offer. Especially so since the work could to a large extent be absorbed without increasing the number of machines already on hand and without in any way increasing the number of people which comprise our tabulating units, and at the same time affording offices considerable relief at the peak period of the month, without changing or delaying existing payday schedules.

The majority of employees are on a monthly salary rate basis and may receive their pay checks bi-weekly, semi-monthly or monthly, which permits the establishment of a master file containing a tabulating card for each employee, on which the complete payroll earnings and all standard deductions as well as net pay are pre-punched. Once this file has been established and kept current, it is necessary only to reproduce it at each pay period in order to obtain the necessary earnings data from which the payroll register and payroll earnings checks can be prepared.

The maintenance of the master tabulating cards and the establishment of controls are the responsibility of the payroll unit. The files remain in the possession of the payroll unit at all times, with the exception of a brief time at the close of each pay period. Any permanent changes in the master file are recorded on the manually prepared payroll control sheet, by the payroll unit, and the employee's master card is removed from the permanent file and a new card substituted therefor.

The reproduced duplicate file of master cards, to-

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Cycle Billing

By J. R. WOODWARD

Gulf Oil Corporation has been handling retail accounts receivable with tabulating equipment for a number of years, and has in recent months adopted cycle billing in connection with this procedure. Tabulating equipment is quite fast and capable of posting and completing approximately 1000 statements per hour of an average number of postings, and consequently billing customers once each month is a rapid operation. However, it has been found that under the cycle plan efficiency is much greater as a result of a more even distribution of the accounting and collection functions throughout the month.

Under the cycle billing procedure the customers' accounts are divided into groups or cycles, ranging from 15 to 20, with each cycle billed on a different day during the month. Every customer, however, is billed once a month and on approximately the same day each month. Equal distribution of this work throughout the month has been a benefit by providing an approximately even work load each working day for all departments concerned.

In order to explain the cycle billing procedure itself, it is first necessary to give some explanation as to the manner in which retail receivables are handled with tabulating equipment. All retail customers are assigned account numbers consisting of seven digits which appear on their credit cards as follows: 9-W-1234. The first digit of this code identifies the central accounting office where the account is carried, while the second and third digits, shown on the credit card as a letter, represent the first letter of customer's surname. This provides a clue in identifying the account or erroneous account number investigations and is also used for the purpose of establishing individual ledger controls, each of which consists of one letter of the alphabet. The last four digits comprise the

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remainder of the customer's number and permit assignment of 9,999 account numbers for each letter of the alphabet.

A customer's credit card can be used to make a purchase at any dealer or company-operated service station irrespective of the accounting area in which it is located, and even at stations of certain competitive companies (with which exchange agreements have been established). The service station personnel prepare the customer's invoice on a tabulating card invoice form at the time of purchase. The customer is given a paper copy of the invoice at the time of the sale and the tabulating card originals are mailed by the dealer directly to the central accounting office in whose marketing area the service station is located.

Upon receipt of invoices from the dealer or service station by the Central Accounting Office they are forwarded to the tabulating department. The tabulating card invoices are punched for customer account number (7 digits) and revenue (5 digits). Since numerical equipment is used, the letter is punched with the corresponding number of the alphabet, as for example—"A" is punched 01; "B", 02; and "Z", 26. A total card is also punched for each invoice group. No mechanical verification is made at this time. Once these tabulating card invoices are punched, it becomes possible to perform various adding, sorting and posting functions with high-speed tabulating equipment.

The first operation is to make a tabulation of the revenue as a proof of the listing of deliveries submitted by the dealer and for which he claims credit. After the individual invoices have been tabulated and balanced, the proper credit is passed to the dealer. The invoices are first sorted to separate those invoices belonging to other central accounting offices. Those going to foreign offices are listed by tabulating machine and transmitted to the respective offices, together with the proper charge for the value represented by the invoices.

Invoices Sorted on Ledger Code Then Are Stored

The invoices remaining for handling in the local office are sorted on ledger code (by letter) and stored until it is time to bill that particular group. In summarizing the local invoices by ledger a summary card total for each ledger is automatically obtained and balanced. This summary card shows the summary card reference code, an entry code, the invoice count (number of detail invoices) and the total amount applicable to each ledger.

Tabulating cards representing cash payments are likewise punched with the complete customer's number and the amount of payment, but without any interpretation appearing on the card. These cash cards are punched from remittance advice, which in most cases consists of the statement stub returned by the customer and showing customer's number and the amount of his payment. Each day's cash cards are balanced and sorted by letter, with a total or summary card produced automatically for each ledger, and stored in the same manner as invoices.

Preparatory to billing a cycle of accounts, all tabulating card invoices in that group are mechanically sorted for customer number, which consists of the last four digits in the customer's number only, since they have been filed by ledger. At this point prepunched master cards containing addressograph plate impression of customer's number, name and address are matched and merged with the invoice cards. This operation segregates these cards into three groups as follows:

1. Customers' master cards for which there are most current invoices (inactive).
2. Current invoice cards for which there are no master cards. This group is passed to clerks for immediate investigation as they are generally found to consist of invoices which have had the wrong customer's number shown by the dealer or have been erroneously punched.
3. The third group of cards consists of a master card followed by current invoice cards bearing identical customer code as the master card. This group of cards is then given to clerks who visually check the customers' name appearing on the invoice cards to make sure they agree with the names addressographed on the master cards. However, if the invoice does not match the master card, investigation and corrections are made.

While the fan check described above is being made, all current cash cards for this ledger are collated with balance forward cards of the previous month in order to remove the equal cards. That is, if the cash card and balance forward card are identical as to customer number and amount, they are removed as "washout" items and will not appear on the statement. The remaining balance forward cards and unequal cash cards, as well as any miscellaneous adjustment cards which have been punched for journal entries throughout the month, are then merged in customer sequence. When the invoices are returned as correct by the fanning verifier, they are merged with the miscellaneous group mentioned for preparation of customers' statements. Since numeric tabulating equipment is used, the completed statements do not contain customer's name and address; however, the customer's number has been printed on the body of the statement, together with the itemized amount of

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SALARY PAYROLLS

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gether with temporary changes in the earnings and payroll deduction cards, are utilized by the tabulating unit to prepare pay checks and employee earnings statements, payroll registers, payroll summaries, the year-to-date employees' earnings record and several other monthly reports. Summary earnings cards are used to prepare quarterly SS-1B reports, state unemployment compensation reports, annual W-2 returns, and state income tax returns.

An important primary step prior to punching tabulating master cards is the establishment of an employee code register. All employees are assigned a four-position number alphabetically, to facilitate identification. As the new employees are hired, additional numbers will be assigned from the code register, maintaining strict alphabetical sequence.

After all current changes have been recorded to the file, the master file is passed from the payroll unit to the tabulating unit. At this time a total is tabulated of these cards. Once the master file is proved to be in balance with the permanent running control, a duplicate file of earnings cards is reproduced from the master cards for use in the current pay period. The duplicate cards are also tabulated to prove that they are in balance with the controls, whereupon the original master file is returned to the payroll unit.

Payroll Unit Advises of Hours To Be Gang Punched

After the reproduction of the earnings cards from the employee master cards, the payroll unit informs the tabulating unit of the hours to be gang punched in the reproduced earnings cards. The base earnings cards, together with additional key punched temporary earnings cards such as overtime and commission are combined with temporary changes of master earnings cards, such as absenteeism for sickness, days off, compensation cases, leave of absence and jury duty. Also combined with these cards are any miscellaneous deduction cards and the employee name cards. All these cards are then sorted by employee number and occupation code. A pre-punched set of heading cards indicating station name or departmental classification is then placed in front of the sorted cards and the entire group sorted by location code.

The payroll register is then tabulated from these cards with separate sheets for each location code.

The location heading cards are sorted out and the remaining employee name cards, earning cards, and deduction cards are used to tabulate the employee pay check and earnings statement. The employee name cards are removed by the sorter and the earnings cards are sorted to earnings code order. These earnings cards are then tabulated for the payroll summary by types of earnings, together with a grand total for each location.

The earnings cards for all employees are accumulated for the entire month. These cards are used to prepare a number of accounting and statistical reports, as follows:

1. *Payroll voucher distribution:* This is a tabulation of earnings by group, state, voucher sub code and station.
2. *Monthly overtime report:* Overtime earnings are segregated for the preparation of the monthly overtime report.
3. *Monthly summary recap:* All earnings cards for the month are used to prepare a monthly summary of earnings by employee—and for posting U. S. Savings Bond purchases and for occasional pay reference.
4. *Payroll expense by occupational code:* Monthly earnings cards are sorted by occupation code for tabulating this analysis.

After the preparation of all accounting and statistical reports for the month, the employee earnings cards are combined with the previous month's year-to-date cards to tabulate total earnings and deductions for the year-to-date for each employee, during which a new year-to-date card is summary punched. This is prepared in strict alphabetical order by sorting on employee number. This record is used in case of termination during the year and to prepare necessary W-2 termination papers.

Form SS-1B is prepared quarterly using the detail pay cards and employee name cards for the payments made for the three months' period. The Form SS-1B is prepared on continuous forms in multiple copies. The original copy of this form is recapped on the summary transmittal sheet before forwarding to the Federal Government. One copy is retained in the division accounting office. A third copy may be used in some states for reporting employee earnings to the State Unemployment Compensation Department, if permission is granted by the state involved.

Street and Town Cards Merged With Name Cards

A file of employee street and town cards is maintained. Prior to the end of the year, these cards are combined with the employee name cards and sorted by the employee number. A listing is made on the alphabetic accounting machine. This list is checked by the payroll unit for any changes of address. New address cards are punched for such changes. As the year-to-date summary run by employee is prepared, a summary card is punched which represents the annual earnings and deductions for each employee. These summary cards, combined with the name and address cards, are used to tabulate Form W-2 in multiple copy.

CYCLE BILLING

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each invoice, by the tabulating machine. The tabulated customer number permits the setting of address plates in the proper sequence, after which the statements are headed by address plates while still in continuous form.

Summary Cards Punched While Statements Were Printed

At the same time the statements were printed on the tabulating machine, individual summary cards were automatically punched for each account, showing the total amount due. In addition the tabulating machine furnishes a net total of all statements for the ledger, which is then balanced with the control total of the ledger, as established by summary total cards for each day's remittances and each day's invoices and journals previously described.

An important feature of the plan is the use of microfilm equipment. Only one copy of the invoice is received in the central accounting office from the retail outlet. After processing, the invoice is microfilmed and accompanies the customer's statement mailed to the customer. Only one copy of the customer's statement is prepared, which likewise is microfilmed prior to mailing.

DEFINITION, RESPONSIBILITIES

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8. The classification and codification of essential facts and figures for the guidance of management in the operation of the business.
9. The technique of reporting historical as well as forecast facts and figures which directly assist management to chart the business course.
10. The advice and counsel on a professional level (whether furnished as a management service company or proprietor, or as a member of an industrial corporation) to provide the expert "know how" of office systems and procedures.
11. The standards and procedure for administration, education and training of office, accounting and clerical personnel, including on the job training and those standards for selection, placement, rating, job evaluation and appraisal, promotion, demotion, termination.

PROCEDURES, PRESENTATIONS

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Housing the Procedures

1. Determine frequency and type of use, size, volume and appearance of procedure and select an appropriate housing, a binder, or a printed book.
2. Develop procedure numbering system and index.
3. Utilize dividers to assist in organizing and finding data.
4. Select an attractive format considering appearance and use.

Distributing Procedures

1. Develop policy as to extent of distribution and prepare a distribution schedule.
2. Utilize various aids in dispatching and mailing.
3. Consider and provide for disposition of old procedures and acknowledgment of receipt of new ones.
4. Provide for destruction of temporary or emergency procedural instructions.

A PROFILE CHART FOR PROCEDURES

(Continued from page 6)

supervision and embrace those groups even more closely concerned with the "doing" operations. At the third level are the operating department heads, group supervisors or those in positions of similar rank. At the fourth level, finally, are the skilled and semi-skilled "doers"; those who perform in the capacities of stenographer, cost clerk, typist, expediter, keypuncher or timekeeper.

Here, then, is the organization in profile. Once sketched, the procedure writer can more easily plan his procedures according to the needs of each level shown on his profile chart. Procedures according to such a plan will be more effective simply because they are properly directed. For the executive level, policy is clearly established. For the staff level, operations are given direction. For the supervisory level, the sequence of work is stepped off. And finally, for the operator level, the work steps are detailed. Simply stated, procedures planned on the basis of a profile chart have a clear-cut starting and ending point.

Recognition of these four levels does not, of course, preclude that there may be more or fewer. And although the organization may not be formally patterned thus, even an informal segmentation will materially aid in the development of effective procedures. If levels within an organization can be visualized, procedures can be directed in a similar pattern toward a particular level or group. The need for detail in a procedure, or the desire for freedom from detail, therefore, may readily be responded to by the procedure writer, according to the needs of the group which uses the procedure.

Before reducing a system to writing, the procedure writer may first develop his general objectives by glancing across his chart. To fix his position, he may ask, Who wants this procedure? What does he want to know? How much detail is needed? How many groups are affected? How is the procedure to be used? By reducing the problem to these five specific questions, the resulting procedure will be properly planned and stepped off in the direction desired by management.

EMPLOYEES, TOO, HAVE A STAKE

An Editorial

New methods and improved procedures are put into operation daily. Systems men make every effort to sell these ideas to management in order to obtain approval for adoption. But, too often, the proposed method and its merits are not completely sold to the employees directly affected by the change. The careful and elaborate steps taken to present new ideas to management are frequently ignored when presenting the same proposals to the persons who will be performing the operations. Unfortunately, the selling of new methods ends at the top level in too many instances. The failure of many new proposals and the difficulties encountered develop when employees are not completely informed about the changes. Opposition results because human nature resists change.

Once a plan has been sold to management, appropriate steps should be taken to sell the same proposals to the employees involved. Both groups are playing on the same team. Even though the captain may approve of a new play, if the players are not fully convinced of its potentialities and merits, they are likely to fumble. Similarly, an idea thrown cold at a group of people may end up with the same results. One of the responsibilities of systems men is to avoid presenting ideas to employees without first preparing the employees for them. Systems men should carefully observe and, if possible, guide each phase of the selling and installation in order to prevent such occurrences.

Appropriate plans for selling ideas to the rank and file should include one or two meetings regarding the new procedures, instructions and bulletins, clarification of authority and responsibility and the encouragement of questions. Properly prepared and detailed procedures are an aid to the selling. Doubt and uncertainty should be aired at the inception of a proposed installation. It is always difficult to rectify the damage that is done to the new method and to regain the confidence of the employees after a poor selling job.

How many times have we delegated responsibility as a result of a new procedure, but not the authority to carry it out? How many times have we delegated both the responsibility and authority to an individual or supervisor but failed to announce the information to the employees directly or indirectly affected by the change? How many times has a new procedure been put into operation without the delegation of authority and responsibility to a supervisor to carry out the plans? A simple bulletin, timely released, would answer all questions in such instances. Yet how difficult it is sometimes to get such a bulletin approved. Employees would be more cooperative and the plan would be more likely to succeed when the way is properly paved via bulletins and preliminary selling.

The follow-through of a new installation or procedure should also be a part of the selling. When a new idea is being tried, frequently employees will go along with it to give it a trial. However, if it is not guided for refinement, and if the systems man does not report to the employees the results of the proposed method, the employees are likely to return to the old familiar way of performing the operation. The follow-through also serves as a check to see that the employees are doing the proposed method properly. When re-checking on an installation, the people performing it should always be encouraged to submit ideas and suggestions. Many additional improvements can be made at this stage if the employees are made to feel that they are part of the team. Complete and cooperative participation by all concerned will result in a satisfactory new procedure and better personnel relationships.

Let us not forget the human element at the lower level when selling new systems and new procedures. Proper introduction and follow-through will consistently make the work easier for all concerned. If systems specialists follow these basic rules, the entire field of systems and procedures work will be further advanced to its destined position in the realm of management.

V. LAZZARO
Merrill Lynch, Pierce, Fenner & Beane

NATIONAL SYSTEMS MEETING

Plans are nearing completion for the 1950 National Systems Meeting to be held in New York City on October 19th and 20th. A preliminary canvass of SPAA chapters has indicated an appreciable increase in attendance over the 1949 meeting in Philadelphia, with representation from all chapters. Furthermore, chapters conveniently located to New York are being urged to insure a 100 percent turnout. The National Systems Meeting will, in addition, be open to representatives of business and industry generally until the quota imposed by facilities at the Hotel New Yorker has been reached. Full details on the theme of the meeting, the program and registration requirements are scheduled for release within thirty days.

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